

Name: _____ Date: _____ Period: _____

Special Products

For any real numbers a and b for any expression involving real numbers and variables:

$$(a+b)(a+b) = a^2 + 2ab + b^2$$

Also recall that $(a+b)^2 = (a+b)(a+b)$

$(a+b)(a+b)$	a^2	$a \cdot b$	b^2	$a^2 + 2(ab) + b^2$	$a^2 + 2ab + b^2$
$(x+2)(x+2)$	x^2	$2x$	4	$x^2 + 2(2x) + 4$	$x^2 + 4x + 4$
$(x+3)(x+3)$		$3x$			
$(x+4)(x+4)$					
$(x+5)^2$					
$(x+6)^2$					

$$(a-b)(a-b) = a^2 - 2ab + b^2$$

Also recall that $(a-b)^2 = (a-b)(a-b)$

$(a-b)(a-b)$	a^2	$a \cdot b$	b^2	$a^2 - 2(ab) + b^2$	$a^2 - 2ab + b^2$
$(x-2)(x-2)$	x^2	$2x$	4	$x^2 - 2(2x) + 4$	$x^2 - 4x + 4$
$(x-3)(x-3)$		$3x$			
$(x-4)^2$					
$(x-5)^2$					

Lastly, $(a+b)(a-b)=a^2-b^2$

$(a+b)(a-b)$	a^2		b^2	a^2-b^2
$(x+2)(x-2)$	x^2		4	x^2-4
$(x+3)(x-3)$				
$(x+4)(x-4)$				
$(x-4)(x+4)$				
$(x-5)(x+5)$				

Prove the Special Products rules using the FOIL Method